Claims

1. A data transmission system for transmitting information bits comprising:

encoder for generating encoded symbols by encoding said information bits using at least three constituent encoders and two interleavers, wherein a first constituent encoder has a greater depth than a second constituent encoder;

decoder for decoding said encoded symbols by performing a series of subiterations using at least one soft-in-soft-out decoder for generating extrinsic data, wherein said subiterations are performed based on the depth of a corresponding constituent encoder, and said extrinsic data is interleaved during a portions of said subiterations based on said two interleavers.

2. An encoder for encoding information bits comprising:

first constituent encoder for generating a first set of parity symbols;

first interleaver for generating first interleaved information bits from said information bits;

second constituent encoder for generating a second set of party symbols from said first interleaved information bits;

second interleaver for generating second interleaved information bits from said information bits;

third constituent encoder for generating a third set of parity bits from said second interleaved information bits,

wherein at least one constituent encoder, selected from said first constituent encoder, said second constituent encoder and said third constituent encoder, has a greater depth than at least one other constituent encoder selected from said first constituent encoder, said second constituent encoder and said third constituent encoder.

3. A method for decoding an encoded signal comprising the steps of:

a) generating a set of receive samples from said signal;

b) decoding said receive samples according to a first coding scheme, wherein said first coding scheme has a first depth;

c) decoding said receive samples according to a second coding scheme, wherein said second coding scheme has a second depth;

d) decoding said receive samples according to a third coding scheme, wherein said third coding scheme has a third depth, and wherein at least one depth from said first depth, said second depth and said third depth is not equal to at least one other depth from said first depth, said second depth and said third depth.

4. The method as set forth in claim 3 wherein said first depth is equal to 4, said second depth is equal to 3 and said third depth is equal to 2.

5. The method as set forth in claim 3 wherein said first depth is equal to 3, said second depth is equal to 2, and said third depth is equal to 3.

6. The method as set forth in claim 3 wherein said first depth is equal to 3, said second depth is equal to 1, and said third depth is equal to 3.

7. The method as set forth in claim 3 wherein said first depth is equal to 2, said second depth is equal to 1, and said third depth is equal to 2.

8. The method as set forth in claim 3 further comprising the steps of:

deinterleaving said receive samples according to a first pseudo random pattern;

deinterleaving said receive samples according to a second pseudo random pattern.